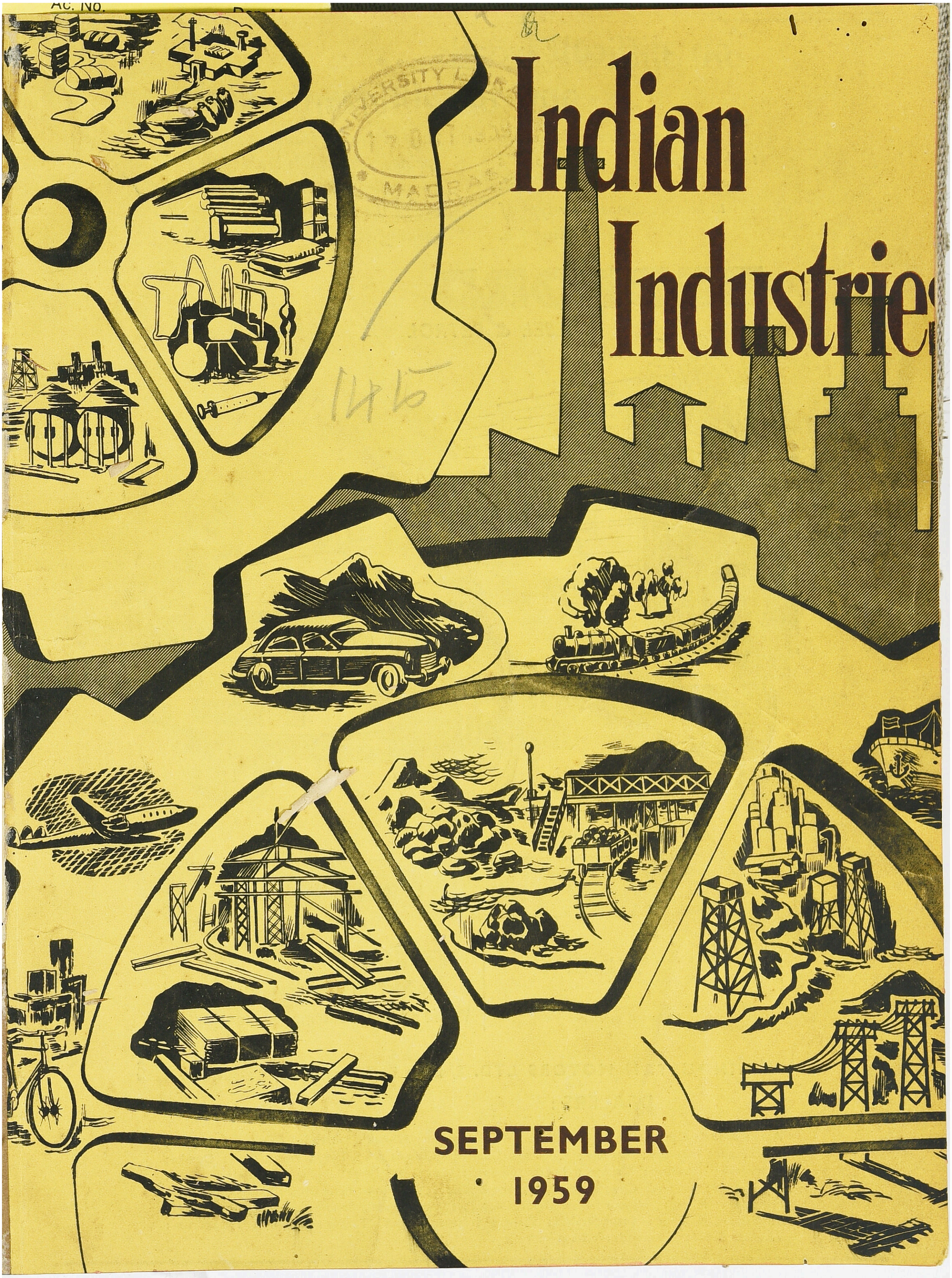

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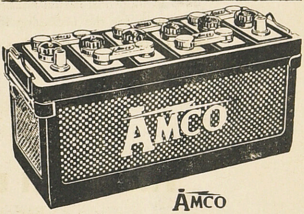

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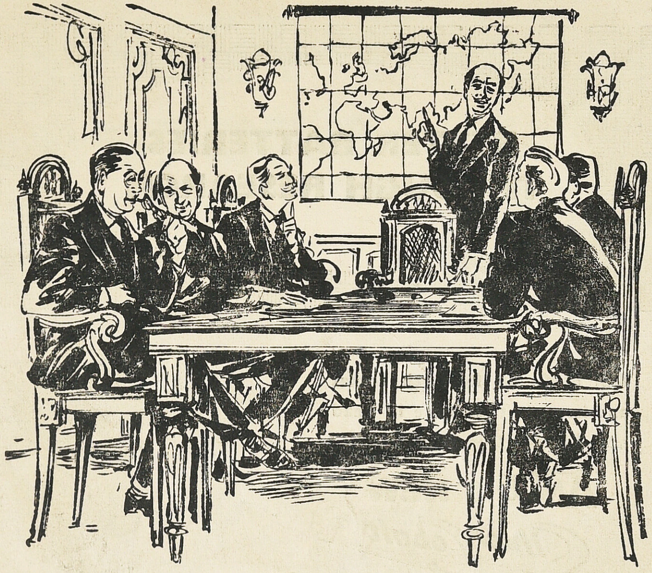

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TRANSPORT

Over four lakhs of automobile vehicles ply day in and day out on three lakhs miles of India's roads. The crude oil annually consumed by these exceed Rs. 90 crores. Dunlop and Firestone factories supply rubber tyres. And their demand is steeply increasing.

During the First Plan, we spent Rs. 156 crores on Roads. By 1961, we will spend over Rs. 269 crores. Burmah Shell has the largest oil refinery. Stanvac has a designed capacity of 1.2 million tons. Caltex has its refinery at Vizhakapatnam. All these three produce over four million tons a year. Our annual need is five million tons. Our resources are estimated at 2½ million tons a year. Assam oil company has 20 successful oil Wells. It produces 0.4 million tons per annum. The drillings at Jwalamukhi and Hoshiarpur are promising. We import oil to the tune of Rs. 90 crores a year.

After centuries of stagnation, India has 14,000 miles of national highways of which 2000 miles are a two-lane carriage. About 60 bridges are to be built at a cost of Rs. 40 crores. In 1943—44, the surfaced miles and unsurfaced miles were 88,000 and 1,32,000 respectively. In 1956 they were 1,21,617 and 1,95,051 miles. By 1961, they are expected to be 1,44,000 miles and 2,35,000 miles.

Sixty years ago the first Motor vehicle landed on Indian shore. Today we have six manufacturers, on whom the responsibility of producing another 3 lakhs of cars rests.

There are 17 big manufacturers of bicycles and with the efforts of other 46 small manufacturers, over 13 lakhs of cycles are produced every year. There are about a crore of bullock carts and they carry 12 crores tons.

By 1961, we need 1,50,000 commercial vehicles and that will cost us over Rs. 875 crores. This problem baffles solution. We have invested on roads and road services over Rs. 1500 crores, while Railways, water transport, postal 'communications' and others have attracted only Rs. 1500 crores.

Road transport, employing 15 lakhs workers—invisibly about a million—will soon be playing its legitimate role in handling long distance traffic also.

As Shri S. K. Patil, our former Minister for Transport and Communications puts it, in a

short span of thirty years, its growth has been rapid and today road transport is, after the Railways, the most important carrier of men and material in the country. Whether in Rourkela or in Bhakra, it has successfully transported the numerous requirements of these gigantic projects.

In our rural economy, too, road transport has played an important part. It has helped to link up hitherto inaccessible villages with rail heads and busines scentres, thus sowing prosperity at all places it spread. In hilly regions as Himachal Pradesh and Manipur, the role it plays is admirable.

The future of road transport is great. Mr. Eugene Black, President of the World Bank said "that transportation will appropriately be regarded as top priority for any bank financing that may be devoted to the Second Five Year Plan."

The words of Shri T. S. Rajam of the renowned T. V. S. are worth pondering over:

> "So far, road transport has been sadly neglected and given a step-motherly treatment. The object of the code of principles laid down by the Government of India and circulated to State Governments for implementation was to curb road transport in order to protect Railway interests. By this, the growth of road transport has been hindered and hedged in with a number of statutory restrictions and disabilities. Restrictions were placed in regard to the number of goods vehicles for which, permits have to be issued, and on the distance of operation, especially on Railway parallel routes. Thanks to the revision of this policy by the Government of India, the Motor Vehicles Act has been amended and the code of principles will now be a dead-letter. The authorities both in the Centre and States should actively consider liberalisation in the issue of permits and remove effectively all kinds of restrictions imposed on the haulage of goods by road. It must be understood that there can be no competition between rail and road transport and one is complementary to the other. It cannot be denied that there is bound to develop a very serious gap between demand and supply of transport services during the Second Plan period for reasons stated above and the only agency which can fill up this gap and ease the crisis is Road Transport. Hence it will have to be allowed to develop itself according to its genius and enabled to grow to its full stature."

Railways

The part railways play in Indian economy is very vital. The need for increasing its capacity has been urgent and much has been done during the first Plan and the second Plan so far.

In 1939, the total railway staff was 6,41,099. Today it is over 1,111,026. The gross receipts from Rs. 104 crores in 1939 have shot up to Rs. 390 crores now. Expenses from Rs. 70 crores have grown fourfold.

In 1939 there were in India only 7,919 locomotives, 16,620 passenger carriages and 2,05,017 wagons. Today their increase is very appreciable. We have over 10,400 locomotives, 19,000 passenger cars and nearly three lakhs of wagons. And the production is steeply rising.

It appears that by 1965, that an annual freight capacity of 260 million tons may be required. There are vast tracts of lands in the country which have still to be opened up. New construction will largely be in the more difficult areas.

And for all the increasing amenities, the average fare passenger per mile and average charges by ton per mile is the cheapest in the world.

The changing pattern of traffic in a developing economy calls for yard alteration and remodellings and other line capacity works.

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Rail renewal programmes have to be accelerated. Rolling stock when it is used most intensively and at greater speeds needs greater attention. And the problem of personnell crops up.

In spite of all these tremendous handicaps, the record railways have achieved is an enviable one.

Shipping

India is a great maritime country. She has a large and extensive overseas trade. By her geographical position, she commands the Indian Ocean. She occupies a strategic position in the South and the South East Asia. Ships passing from West to East and from East to West have to cross the Waters adjacent to India's shores. These fundamental considerations make it imperative, both in the interest of India as well as in the interest of other countries in the Indian Ocean, that India should have a large and powerful navy, both of supply and defence.

For full thirty centuries India maintained an unchallenged position in the old world as the foremost maritime country. Passage of time has no doubt shed the poppy of oblivion on the glory Indians achieved in hoary past. Indians first set out on oceanic voyages. Vedic references, the excavations of Indus valley civilisation at Mohenjodaro, the mention of the Indian port of Ophir in the old Testament, the colonisation of the Pacific islands by the Indians, the discovery of ancient coins in Andhra Pradesh dating back to the third century A. D.—bearing the stamp of double-masted-ships—and other historical finds bear eloquent testimony to the maritime glory that was Ind's. In the art of shipbuilding we were in the forefront. Indian ships were more durable and more economical than any vessel from any country. Due to intervention of British interests, Indian shipping fell on evil days. The heroic battles fought on the floor of the Central Legislature read as chapters of noble fights put forth for revitalisation of a dying industry. Since Independence, a new chapter has begun and we are doing our best to revive the glories of the past.

Air Transport

Since nationalisation in 1953, air transport industry has entered a new phase of development. The passenger traffic has gone up by 15 times and cargo traffic by 9 times. Indian Airlines Corporation is now proud of operating over 100 flights a day. Its Night Air Mail Service is the most unique in the whole of East.

Air India International has a great future before it. The three Boeing 707 Jet airlines now on order will add to its prestige and efficiency. The youngest of our transport systems, Air Transport is bound to play a mighty fine part in the world of tomorrow. ***

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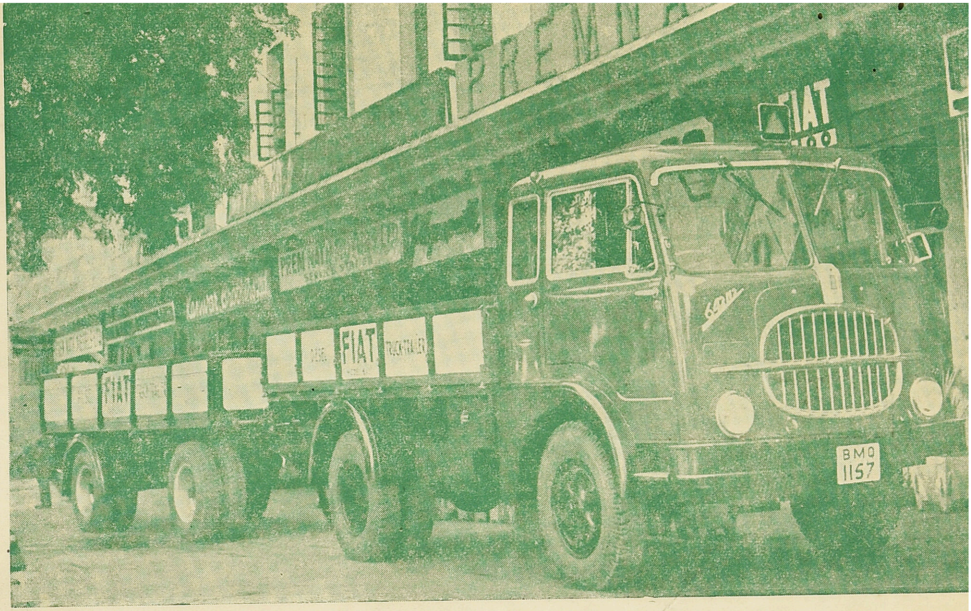
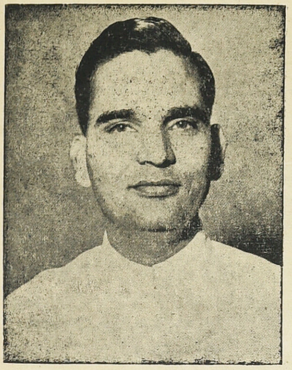


ROAD TRANSPORT



This masterly analysis by a masterly mind is a classic on a most progressive of Major Industries in India.

TRANSPORT VEHICLE INDUSTRIES

MANUBHAI SHAH

Union Minister of Industry

With the advent of political independence, the National Government took up measures to promote industrial development of the country recognising the urgent need to achieve economic freedom. With a view to canalise the available resources to the best utilization, Parliament in 1951 passed the Industries (Development & Regulation) Act empowering the Central Government to regulate the development of industries which are mentioned in its first schedule. Under this Act, the first Development Council was established in 1953 for the industries of the Internal Combustion Engine and Power Driven Pump group. This was followed by the Development Council for bicycles and a third for the fertilizer industries. Encouraged by the success of these Councils in any more Councils for other scheduled industries have since been constituted. There are at present 15 Development Councils working today covering various industries. Of the 16 functions that could be entrusted to these Councils only a limited number of functions had been assigned to each of them in the beginning; now all the Councils have been assigned with all the 16 functions. A Development Council for Automobiles is the 16th in the series being constituted with all the full terms of reference.

Automobile Industry

While every industry is important in itself, the Automobile industry has the pride of place among those considered essential in the national economy of any country, particularly in a large country like India. It has voluminous capacity for employment in the production and distribution, in the subsidiary industries—both

on a large and small scale, in the trade for the supply of raw materials; and in the transport services and maintenance. The automobile is also a source of revenue for the State and Central Governments. Last but not least is the flexibility of the industry: it could easily be switched over to other items of production in any national emergency not only by virtue of the means of production at its disposal but also the superior technical talent acquired by its personnel. Because of the wide impact of the industry as a whole in the life of the common man, its wellbeing and desired progress have become his everyday concern and as such these industries evoke so much public interest.

Assembly of Multitudes of Parts & Components

A complete automobile is built up of as many components as 4000/5000. The many production problems relating to so many of the components can never be solved by individual firms. Neither the capital, nor the machinery, nor the experience could be concentrated in one place. The production of the various components, therefore, have to be undertaken by several units. This method may be considered as the best and the most economic form of manufacturing an automobile. Therefore there will have to be a harmonious and efficient co-operation and co-ordination between the various manufacturers of the different finished and semi-finished components, between the assemblers and the multitudes of manufacturers and sub-contractors of components and parts.

Regulated Industry

On account of the importance of the industry as well as its complicated nature, the Government of India by the Industrial Policy Resolution (in 1948) declared that the automobile industry is one whose planning and regulation should be its concern in the interest of national economy. Following this resolution, an enquiry was instituted by the Tariff Commission in 1953. On its recommendations, which are too wellknown, the lines on which the industry should be developed and the types and makes of automobiles which should be manufactured in the country were decided. Prior to 1953, there were a number of manufacturers—cum—assemblers in the country of which only two had some loose manufacturing programmes; the others were engaged in mere assembly. The types and models of cars and trucks were more than 135. This was a terrifically large number and hardly any attempt had been made in the past at rationalisation to a few models and types. The Tariff Commission reported the delay in developing the automobile industry was mainly due to the multiplicity of the makes and types of vehicles that were being developed and the consequential low demand in each category. The Government thereupon regulated the development in such a way that the import licences were granted only to those makes and types of vehicles whose programmes had been approved by Government. This reduced the types and models to a very small number.

Streamlining of Policy

Further in 1955, the Tariff Commission was again requested to review the progress made by the Automobile Industry. The Commission submitted its report by the end of 1956. The main recommendations were :

a. Priority to the manufacture of commercial vehicles rather than passenger cars,

b. In the case of commercial vehicles as the maximum demand would be for diesel vehicles, instead of trying to discourage this trend, every effort should be made to meet the demand;

c. Additional capacity required for commercial vehicles should be installed in existing units rather than new ones.

d. The automobile manufacturers should purchase the products of ancillary

industries in India for use as original equipment.

e. Steps should be taken to prevent haphazard and unregulated growth of ancillary industries; and

f. The ancillary industries should as far as possible be developed by firms who are not connected with the main automobile manufacturers.

Most of the Commission's recommendations referred to were accepted by Government. One of the important outcomes of this investigation was the grant of protection to the industry for a period of 10 years as recommended by the Tariff Commission. The difficult foreign exchange situation that developed by the end of 1956 and in the beginning of 1957, necessitated certain further changes in the policy recommended by the Tariff Commission and the types and makes of vehicles to be developed were rationalised to only 3 passenger cars, 3 medium type trucks, one heavy truck, one jeep and one light truck.

		Manufacturers
(i) Cars:		
	1. Standard Ten)	3
	2. Fiat 1100)	
	3. Hindustan Ambassador/Land master)	
(ii) Trucks:		
	a. Light—1 ton	
	1. Dodge (Petrol & Diesel)	1
	b. Medium—3/5 tons	
	1. Dodge (with petrol engine))	
	2. Mercedes Benz (with diesel engine))	3
	3. Bedford)	
	c. Heavy (5 tons & above)	
	1. Leyland Comet, Tiger/Titan	1
(iii) Diesel Engines: (for medium trucks)		
	1. Perkins—P6 suitable as origi-)	
	2. Meadows/nal fitment for Dodge) and Bedford Trucks)	2
	3. Mercedes Benz)	1
(iv) Jeeps		
	1. Willy's Jeeps	1

This shows that in cars and medium trucks, we have 3 models and 3 manufacturers and in light trucks, heavy trucks and Jeeps we have one model each and one manufacturer. This shows the extent to which the automobile policy has been able to rationalise the models and manufacturers from the original multitudes of models, manufacturers and assemblers before 1953.

Automobile Committee

Recently the Government have appointed an Automobile Committee to enquire and report on certain aspects of the automobile industry. The principal terms of reference are:

a. To review the progress of the automobile and ancillary industries and recommend measures to increase the indigenous content of the different vehicles in the shortest possible time, keeping in view the targets and schedules envisaged in 1956, when the manufacturing programmes of the different producers were approved.

b. To recommend measures to be taken to reduce the cost to the consumer of different vehicles (car, jeep and truck) under manufacture by the automobile industry and suggest the most appropriate pattern of organisation for the future expansion of the industry to ensure lowcost production;

c. To examine the feasibility of producing a low-cost passenger car within the price range of 5,000 to 7,000 rupees including within the scope of such examination not only schemes previously presented to Government, but also other models of cars that have been developed in different countries and suggest ways and means of manufacturing such a car in the country;

d. To recommend targets of production of different types of vehicles for the

Third Five Year Plan;

and

e. To indicate the financial implications including foreign exchange, of development programmes that might be suggested under (a), (b) and (c) mentioned above.

The Automobile Committee is expected to submit its report by September, 1959.

Rapid Progress:

It is a matter of gratification that the Automobile industry has progressed rapidly as a result of the efforts made both by the Government and the industry. The production of vehicles went up steadily upto 1957. However, this increase could not be maintained in 1958 mainly due to the lack of adequate provision of foreign exchange. The production figures were:

	1950	1956	1957	1958	1959 (estimated)
Cars	8,728	13,666	12,171	8,113	13,000
Jeeps	367	4,329	3.899	4,118	5,500
Trucks	8,765	14,143	15,665	13,400	16,000
Total:	17,860	32,138	31,735	25,631	34,500

Increasing Indigenous Contents:

The progress of any industry could be judged from the extent of indigenous content achieved by it in a period of 4/5 years. In 1953 there was hardly any manufacture apart from the assembly from wholly imported components incorporating the indigenous tyres, tube, battery and upholstry materials, except in the case of one car (Hindustan). The latest indigenous contents achieved uptodate are:

Standard Ten	...	49.4%
Fiat 1100	...	56.6%
Hindustan Ambassador	...	73.4%
Jeeps	...	66.1%
Dodge—3 ton 165" W.B.	...	62.0%
Mercedes Benz 165" W.B.	...	64.4%
Leyland Comet 163" W.B.	...	52.0%

arrived at by comparing the c.i.f. price of the imported components (finished & semi-finished) with the ex-factory cost of the vehicle in India. Even here in respect of certain vehicles, the desired much more increase in the percentage beyond the level of 1957 could not be achieved as the necessary machinery and equipment required to further increase the indigenous content could not be made available due to shortage of foreign exchange for the capital goods and machinery.

Apart from the two truck manufacturers having a programme for the manufacture of their own diesel engines, two other firms exclusively are established for the production of diesel engines for supply as original equipment to the other truck manufacturers and their production since 1955 has been:

	1955	1956	1957	1958	1959 (estimated)
Perkins	3875	3236	3011	3819	6500
Meadows	Nil	144	322	436	800
Total:	3875	3380	3333	4255	7300

The average indigenous achievement is of the order of 67%.

However, compared with the position of the industry in 1953, there has been a big development in both the quantity of production and in the indigenous contents. Also now Government has been able to approve and sanction the release of necessary foreign exchange for machinery, equipment, tools, jigs and dies for all the manufacturers, and it is hoped that at the end of the Second Five Year Plan, the indigenous content of the cars and vehicles would be raised to 75/85% on an average. Thus with all the handicaps of a very complicated and difficult industry like the automobiles in the early years of industrialisation in any country, and the consequential trails and errors, the country can now feel the satisfaction that on the whole the progress has not been unsatisfactory and the industry therefore deserves our congratulations for the work done so far. Compared to most of the newly

industrialising countries, along with other engineering industries of our country, our automobile industry is also going ahead on the right lines with a satisfactory rate of progress.

Motor Cycles And Scooters:

The manufacture of motor cycles, scooters and three-wheelers was established only in the year 1955 and there are at present three firms manufacturing these items. The types of vehicles under development and their production year-wise have been:

PRODUCTION (In Nos.)

	1955	1956	1957	1958	1959 (Estimated)
Motor Cycles: 150 cc, 350 cc	419	1022	1827	2113	3000
Scooters: 150 cc; *Scooterette:* 48 cc	533	4735	6528	4391	7000
3-wheelers: 150 cc, 350 cc, 400 cc	3	529	852	683	1500
Total:	955	6286	9207	7187	11500

This shows the considerable progress achieved so far in these items of the industry.

On an average the indigenous content achieved is about 40%. It is estimated that the indigenous content would rise to about 70 to 75% by the end of the Second Plan period. Though these vehicles have been popular, due to the foreign exchange restriction, it has not been possible to manufacture a much larger number to utilise the full installed capacity, than what has been done so far for increasing the production further, to meet the growing needs of these vehicles.

Trailers:

Transport capacity could be augumented by using truck-trailer combination. With this end in view, manufacture of trailers have been encouraged. There are at present 12 units manufacturing trailers of 2, 4 and 8 wheel types having a carrying capacity upto 10 tons. The production of trailers since 1955 has been as under:

PRODUCTION (In Nos.)

1955	1956	1957	1958	1959 (estimated)
1674	1899	1862	1968	2900

Pattern of Development:

In all countries where this industry has been successfully developed, its pattern in principle has been the same as is adopted by us for attaining the best results. Briefly the development methods adopted elsewhere consist of the following three activities:

(*a*) An activity essentially engaged in the manufacture of major components and assembly of the automobile itself.

(*b*) An activity engaged in the manufacture of several special components used exclusively on automobiles but as original equipment and replacement parts in the spare parts market as a feeder and ancillary industry to the main automobile manufacturer.

(*c*) A general engineering industry which caters for the automobile industry, besides catering to other industries as well.

The demarcation between these three groups is rather thin, as each one is inter-dependent on the other. Sometimes, there is even overlapping of the activities in these three categories. However, it can be safely said that a main automobile manufacturer manufactures 35 to 45% of the total components that go into an automobile in his own factory and the remaining 55 to 65% are contributed by the ancillary industry.

Automobile Ancillaries:

A nucleus of Automobile Ancillary industry already existed in the country, but its growth

during the First Five Year Plan period had not been very satisfactory. However, during the first three years of the Second Plan period considerable progress had been achieved. At present there are 44 units engaged in the manufacture of various ancillary items besides the Original Equipment manufacturers (i.e., 6 Automobile manufacturers, 3 Motor Cycle & Scooter manufacturers and two vehicular type Diesel Engine manufacturers). For a healthy and balanced development of the Automobile and allied industries as a whole, it is essential that there should be perfect co-ordination between these two inseparable sections of industries and it should be a pride for each other to be associated with one another. This can only come when an ancillary industry, as in other countries, becomes an asset by producing products of quality and acceptable not only to the original equipment manufacturers of automobiles in this country, but to the acceptable international standards. There are problems which have got to be solved between these two sections and this could be best done by trying and understanding the practical difficulties of each other, discussing the day-to-day problems and overcoming them in the national interest rather than strictly personal or firmwise interest and bearing in mind the quality and the end price to the consumer.

The production of the important components by the ancillary industry in 1951, 1957 and 1953 has been as under :

(Production In Lakhs of Rupees)

	1951	1957	1958
	(1)	(2)	(3)
Piston assembly and parts thereof.	9.77	65.88	81.00
Cylinder liners.	Nil	9.15	10.75
Thin-wall bearings.	,,	3.50	6.00
Inlet & Exhaust Valves.	,,	1.25	2.50
Fuel Injection Equipment and parts thereof.	,,	94.07	190.00
Oil, Fuel & Air Filters,	,,	0.81	1.55
Radiators.	1.87	18.54	17.50
Brake Linings	—	23.50	25.00
Clutch Facings	—	1.45	2.00
Shock absorbers.	—	4.38	6.50
Leaf Springs.	29.50	77.72	120.00
Spark Plugs.	—	9.07	11.20
Storage Batteries.	1.17	2.10	2.40
Gaskets	—	—	8.00
Miscellaneous.	—	—	21.60
Total :	Rs. 42.31	Rs. 311.42	Rs. 506.00

Achievements and Gaps :

The total production of automobile ancillaries was about Rs. 42 lakhs in 1951, whereas during the years 1957 and 1958 the production figures were over Rs. 3 and 5 crores respectively. This is a big achievement. These figures again are exclusive of the production of numerous small firms who are producing many automobile components, but whose activities do not come under the provisions of the Industries (Development & Regulation) Act, and whose production statistics are not available. In this connection I may mention that capacities for the manufacture of agricultural tractors, road rollers and Air Compressors have been well established and proposals for the manufacture of heavy earthmoving machinery have been approved which also depend upon your ancillary industry to a very great extent. Therefore the production of automobile ancillaries could be easily raised to Rs. 15 to 20 crores per annum in the next 3/4 years, if concerted efforts are made.

You will be glad to know that a number of new proposals, not only for effecting substantial expansion of the existing undertakings for the items already being manufactured but also for undertaking the manufacture of new ancillary items for which capacity didn't already exist, have been approved. Such items cover Starter Motor and Dynamos, cut outs, distributors, wheels and rims, dash board instruments, steering assembly, Pistons, Thin-wall bearings, fuel injection equipment, brake linings, radiators, ignition coils, electric horns and forgings & gear cutting. Capacities have yet to be established for items such as fuel pumps, tapered and roller bearings, precision

die castings, garage equipment and steering wheel. Thus this shows the field yet to be covered.

With the metallurgical advancement of the country, it is expected that most of the raw materials required by the automobile ancillary industry would be available within the country by the end of the Third Five Year Plan. Essential raw materials which cannot be procured indigenously could be imported, because it would be a saving in foreign exchange to import the raw materials rather than the finished or semi-finished components which are presently imported.

Investment:

The authorised capital of the Automobile and Transport Vehicle manufacturing firms is about Rs. 60 to 65 crores and the paid up capital is about Rs. 30 to 35 crores. The investment in plant and machinery and buildings is of the order of Rs. 30 crores. During the next 2/3 years, the actual investment is expected to touch the figure of about Rs. 40 to 45 crores.

Total Production:

The total production of all the sections of the automobile industries coming within the purview of your Council in 1951 was Rs. 34 crores, in 1958 it rose to 52 crores and in 1959 it is likely to be of the order of Rs. 62 crores. The importance of this industry from the employment angle would be evident from the fact that whereas the total employment figure in the automobile and connected industries is in the neighbourhood of 22,000 to 25,000. This, however, does not include the indirect employment this industry affords in various distribution, operation and maintenance centres connected with it. It would not be an exaggeration to say that the indirect employment figure would be about 5 to 6 times the figures of direct labour.

Quality of Production:

All the automobile cars and vehicles and transport items being manufactured in the country have been undertaken in collaboration with wellknown foreign firms and are of well proved designs. They are being made to the same international standards and specifications. However, there have been a few reports now and then pointing out to some defects in some of the vehicles manufactured indigenously. The number of complaints have now become far and few. Thus the quality and standard of manufacture of all models has been on the whole satisfactory though there is still great need of improvement and streamlining in assembly as well as standardisation and manufacture of each and every component and part. The responsibility of maintaining high standard of quality rests on the main manufacturers as also upon the various ancillary suppliers.

Cost Structure:

The cost of a vehicle produced in the country have been higher than similar vehicles produced abroad. This may be to some extent due to the volume of production being low. The industry may be said to be still in the process of development. Similar perhaps has been the experience in other countries at the beginning of indigenous manufacture with low volume of production when mass production and production line methods could not be employed But this could be, at best, considered a partial truth. There is undoubtedly great scope for reduction of cost and intensive efforts on raising productivity per unit of investment and productivity per man-hour employed could help to reduce costs to a considerable extent. Developing commonality and interchangeability of parts and standardisation of parts and components could save a good deal of expenditure. Thus along with the development of quantitative production, one of the most important task that your Council should immediately undertake is to probe into the present high cost structure and evolve and implement ways and means by which these costs of every vehicle could be reduced so as to make every vehicle considerably cheaper than as at present. I would therefore suggest that the Council may immediately set up a sub-com-

mittee to study the cost structure of different vehicles and make suitable recommendations for reduction in costs of manufacture.

Responsibility of Main Producers:

The structure of the automobile industry is very complex and you will agree that though the healthy growth of the industry depends primarily on the manufacturers, the extent to which close liaison is maintained between the manufacturers on one side and those engaged in the maintenance, repair and distribution on the other. The Council may consider how best this liaison could be established. And I may also remind the main producers here that the success of this industry and this Council would depend mainly on the ability, competence and farsightedness which they as the major producers bring to bear upon the tasks facing this industry.

Assessment of demand of the items that fall within the purview of the Council, their requirement of trained man-power raw materials, capital plant and equipment, quality control, standardisation, efficient distribution of the manufactured products and the establishment of adequate repair and maintenance facilities are some of the important issues which might receive the attention of the Development Council. In this connection I would request the Council to pay special attention to the distribution and after-sales service of vehicles on which frequent complaints have been received in the past from the public. As a result of these complaints, the Government have had to take certain measures to check the malpractices that appeared in the trade. It should be the endeavour of the Council to establish a code of ethics for the industry so that the industry could function to the full satisfaction of the public.

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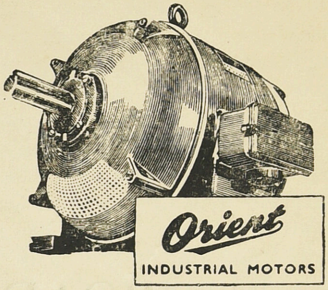

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ROAD TRANSPORT

R. G. SARAIYA
President, B.S.R.T.C., Bombay

Transport is an essential element in any Plan for the development of the Country. Without adequate and efficient transport facilities the entire edifice of the Plan would come to the ground. Increased agricultural and industrial production may not reach the consumer, raw materials may not reach the factories—there would be gluts at the points of production and scarcity at the points of consumption and the entire production schedule of organised industries would be disrupted.

The Second Plan envisages increase in production from 151.672 million tons in 1955—56 to 228.40 million tons in 1960—61, excluding items like automobiles, machines, etc. which could not be listed in tons. National income is consequently expected to increase from Rs. 10,800 crores at the end of the First Plan to Rs. 13,480 crores at the end of the Second Plan and the *per capita* income from Rs. 281 to Rs. 331 during the same period. The achievement of these targets will not be possible, without adequate and efficient transport facilities.

It is realised that the Railways by themselves will not be able to cater to the needs of the increased traffic during the Second Five Year Plan. It is estimated by the Planning Commission that as a result of increased production, the additional traffic to be moved would be to the extent of 60.8

million tons. It has, further been estimated, that the volume of transport needed for the overall production envisaged in the Second Plan, will be of the order of 199 million tons, while the Railways would be able to cater for 163 million tons. There is some doubt as to whether the Railways can even handle this quantity but there can be no doubt that Railway Transport will have to be supplemented by Road Transport and this in two directions :—(1) road transport will have to cater for the entire traffic in areas—towns and villages—where Railway facilities have not still been provided and (2) road transport will also have to cater for short distance traffic in an ever increasing measure. The Railway Freight Structure Inquiry Committee recommends the following telescopic pattern of legs both for smalls and wagon-loads with the basic rate for the legs as follows :—

> Miles 1-25 : 3.60 pies per maund per mile plus 26-75 : 1.40 pies per maund per mile plus 76-150 : 1.20 pies per maund per mile

and so on till the rate for miles 801 to 1,200 is 0.60 pies per maund per mile and 0.50 pies per maund per mile for loads beyond 1,200 miles.

The effect of the proposed rates would be a substantial increase over the existing rates for transport of Goods up to 150 miles. This will obviously divert more traffic to roads and necessitate an increase in the number of vehicles.

Even for long distance traffic it has been increasingly realised that by providing door to door service, road transport offers an attractive medium especially for more expensive goods like textiles, raw cotton, medicines, pharmaceuticals, etc. Increasing importance of road transport will mean a greater demand for roads and trucks to cope with the traffic.

Develop Roads

One of the most important measures in the development of road transport is the construction and modernisation of roads, as roads and transport go together. The total mileage of metalled roads at the beginning of the First Plan was 98,000. At the end of the First Plan, this increased to 1,22,000 and it is expected that by the end of the Second Plan, the total mileage will go to 1,44,000. The progress in respect of National Highways is equally important. By the end of the First Plan period, a sum of Rs. 34 crores was spent on the development of National Highways. The Second Plan provides for an expenditure of about Rs. 55 crores and it is expected that by the end of the Second Plan, most of the missing links will be built and major bridges completed. Further, a provision of Rs. 28.65 crores has been made for the development of certain arterial roads and grants-in-aid to State Governments for inter-state roads. Then there is a problem of what are called the "revenue cart tracks" which are not maintained properly and it will be necessary to have some authority to look after these roads properly. In the Community Development Schemes, an expenditure of Rs. 19 crores on roads is contemplated. This may help to ease the problem of village roads to some extent. Construction of roads requires little by way of foreign exchange. It creates both employment and markets. It is urged, therefore, that in any process of pruning the Plan, road development is not affected.

The Planning Commission have already started thinking of the third Five Year Plan for the Railways. I am sure they will simultaneously consider the place of road development in the third Plan. I would also urge all institutions connected with road traffic to also start considering the needs for roads in the third Five Year Plan. I would particularly stress the need to provide at least

metalled roads in all the village areas which are not reached by the Railways.

Inter-State Transport Commission

In the context of the need for the development of road transport it is gratifying to note that the Government of India have appointed the Inter-State Transport Commission with wide powers to issue directions to the State or Regional Transport Authorities regarding grant, revocation and suspension of permits and counter-signature of permits for the operation of transport vehicles in respect of any route or area common to two or more States. If need would arise, the Government would authorise the Commission to grant, revoke, suspend or counter-sign all such permits. I welcome the appointment of this Commission and am very happy that the Members of the Commission have been selected with due regard to their knowledge of the problems of transport. I am very glad that it is proposed by Government to enlarge the Inter-State Transport Commission by the addition of a non-official as its fourth member. This inclusion of a non-official member is a most welcome step. I wish this Commission every success in their work.

The Hon'ble Minister also announced a decision to set up a transport development council to replace the existing Transport Advisory Committee and the Central Board of Transport. This Council would comprise the Central Ministers of Transport and Communications, Commerce and Industry and Railways and the Ministers of Transport in various States. This Council would advise in all matters of policy relating to road, inland water and other transport and problems relating to co-ordination between different forms of transport.

At this stage I would like to welcome the decision just announced in Parliament by Shri Lal Bahadur Shastri, to appoint a 30-man road and inland water transport advisory committee with a view to associating non-officials with the formulation of Government's policies and to appoint a central transport co-ordination committee to deal with day-to-day transport problems of different Ministries.

Forms of Transport

The Government have also decided to appoint an *ad hoc* committee under the chairmanship of Dr. P. Subbaroyan to inquire into transport administration in the States and make suggestions to put them on a "more rational and uniform footing." I am referring to these developments which show the increased interest of the Government of India in road transport and in the co-ordination of the various forms of transport.

Another direction in which road transport can be assisted is by the rationalisation of the taxation. Recently the All-India Conference of State Transport Commissioners and Controllers has made the following suggestions :—

(*i*) There should be single point taxation for motor vehicles with a ceiling of 75 per cent of the rates prevailing in Madras.

(*ii*) The Sales Tax on motor vehicles. spare parts, tyres, motor fuel should be levied at the source by the Union Government and the present revenue to the State Governments from these sources should be guaranteed by the centre.

(*iii*) The State Government should levy only one consolidated tax on motor vehicles and they may in turn give subventions to the local bodies at least to the extent of the revenue collected by the latter in the form of octroi, wheel tax and terminal taxes.

If these recommendations are accepted, one of the main sources of friction would disappear and result in encouragement of road transport.

Another factor contributing to the growth of Road Transport would be the formation of viable units who have command of resources to run on a proper economic basis.

Vehicle Production

It has been estimated by the Transport Committee of the Indian Roads Congress that

about 2¼ lakhs of motor trucks will be required by 1960-61 in addition to about 1¼ lakhs trucks that would be required by that date to replace the over-aged and worn-out trucks in the country. Thus, by the end of the Second Plan, about 3½ lakhs of additional trucks will be required. The total number of trucks likely to be produced in the country, in the light of the present capacity of the automobile industry in our country, works out to about 2 lakhs at the most. It is, therefore, essential to raise our target of production of vehicles to bridge this gap of about 1½ lakhs of trucks. It is gratifying to note in this connection that the recent loan of 150 million dollars from the U.S. Export Import Bank can be utilised among other things for industrial projects dealing with the Automobile Industry. I trust that the Automobile Industry will take full advantage of the facility offered by the Export Import Bank of the U.S.A.

In connection with the financial facilities it has been pointed out that an additional 2¼ lakhs of motor trucks will be required by 1960-61. Even if a truck, it is assumed to cost Rs. 20,000, the cost of 2 lakhs of trucks would amount to Rs. 400 crores. While the assistance from the Export Import Bank will be useful for expansion of production of trucks and cars, the Government of India will have also to come forward with schemes to finance road transport operators, otherwise the difficulties of financing outlay on this scale will prove an obstacle to the rapid progress of road transport. In this context the amendment of the State Bank of India Act to enable the State Bank of India to advance money to hire/purchase organisations with a view to assist the road transport undertakings is a step in the right direction.

Trained Personnel

Apart from the question of roads and the vehicles, the most important question is that of trained personnel to operate the goods trucks as well as to provide the numerous services which are required to maintain a fleet of trucks on the road, services like automobile engineering and repair facilities, petrol or diesel oil pumps, supply of spare parts and accessories like batteries, tyres and tubes and so on. The importance of trained staff in this Industry has been realised by the Government of India and the syllabus of such training has been prepared by the Standing Committee (Tech.) appointed by the Conference of State Transport Undertakings and is under scrutiny of the Ministry of Transport. Further, the Sixth Conference of ST Undertakings has recommended to all ST Undertakings to prepare their individual schemes for training of traffic staff and helping to train technical personnel required for development of road transport in this country, and the ancillary industries.

It is here—in the provision of trained personnel, and giving them adequate professional status,—that the Indian Institute of Road Transport can play a valuable part, especially as the Institute is supported not only by the transport organisations but also by organisations representing automobile and ancillary industries like oil refining, manufacture of tyres, spare and accessories, etc. and receives the co-operation of Government departments, both in the Centre and the States, connected with transport. Some of the activities of the Institute have been detailed in the report of the Governing Council before you. The formation of a Tutorial Committee by the Institute was implemented during the year and this Committee consisting of specialists in various aspects of road transport has been entrusted with the work of preparation of study manuals on various subjects covered by the syllabi of the various schemes of examinations of the Institute. This is intended to meet the paucity of standard books on many of the subjects pertaining to road transport. The work of the Committee is in progress and it is expected to publish a few of the manuals before the end of the current year.

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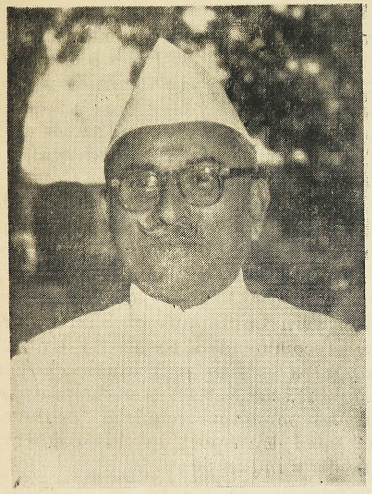

Here is a powerful plea for a purposive programme of co-ordinated utilisation of all forms of transport by an eminent industrialist.

TRANSPORT SERVICES

LALCHAND HIRACHAND

President, Indian Merchants' Chamber, Bombay

In his speech while presenting the Railway Budget for the year 1959-60 the Railway Minister referred to the diversion of high-rated traffic to road transport on routes parallel to the railways and pointed out that suitable measures would be considered in order to ensure the maximum utilisation of our limited transport resources. This statement has touched off a controversy on the relative place and position of rail and road transport in the economy of the country. During the debate on the Railway Budget in Parliament many members vehemently argued against taking any steps which may be calculated to damage the development of road transport. In the background of these views and statements it would be necessary to reiterate the need for evolving a purposive policy calculated to encourage all forms of transport services and enable them to play an effective role in subserving the larger economic needs of the country. The suggestion, on the present occasion, for the desirability of imposing some restrictions on the road transport with a view to obviate chances of the road transport impinging on the interests of the Railways has been prompted, as you are all aware, in the context of the fall in goods earnings on account of a decline in traffic over the Railways during the year 1958. While the short-fall during the year 1957-58 has been shown as Rs. 1.32 crores out of an estimated revenue of Rs. 231 crores, the estimate of the short-fall expected in the

year 1958-59 is placed at Rs. 4.67 crores against an anticipated revenue of Rs. 250.50 crores. It will be seen that the short-fall in revenue is not of a very sizeable character nor is it established that diversion of traffic from the Railways to the roads alone accounts for that short-fall. In this context, any suggestion for placing any fresh restriction on the development of road transport cannot but give rise to a feeling of apprehension. The Railways have recently effected a revision of the freight structure which on their own admission will yield an additional revenue from the goods freight rates by about 4%. As such, measures to restrict the diversion of traffic from the Railways to the roads in order to arrest a fall in revenues cannot be viewed with equanimity.

In this connection, it will be interesting to recall the development in the field or rail-road co-ordination in the past. It was then a case of putting checks and inhibitions on road traffic so as not to attract traffic which according to the Railways was their close preserve. The road transport therefore continued to operate for a number of years under a series of restrictive measures. After the First Five-Year Plan had made considerable progress there was however a growing awareness in the country that for a long time to come, the Railway system by itself will not be able to cater to the increasing traffic and passenger needs generated by the expanding economic activities. It was this realisation that prompted the Planning Commission to suggest to the States to slow down the pace of nationalisation of goods transport. Government took certain welcome steps to remove some of the restrictions on road transport and assist its development, the last one in the series being the appointement of the Road Transport Reorganisation Committee whose report has only recently been submitted to Government.

While the various measures already taken by Government have certainly helped the development of road transport it needs to be stressed that there are other equally crippling factors such as the incidence of taxation, high cost of fuel, fear of nationalisation, etc., which require to be tackled effectively, if road transport is to be allowed to make its full contribution. In relation to the large size of the country the provision of roads in terms of mileage is inadequate and compares unfavouraly with the position in other countries. The need is therfore for measures for a progressive development of the road transport industry and certainly not for any action in the direction of inhibiting its progress. It is a matter of common knowledge that when Railways were working under great pressure, they had welcomed the relief expected to flow from an expansion in the capacity of the road transport iudustry. Now again, when for various factors, the Railways have suffered a slight fall in their revenues, they have come out with a suggestion for some restrictions on road transport with a view to prevent any diversion of traffic to the road transport over long distances of high-rated traffic. I quite realise that Railways are the largest single national undertaking and their interests must be reasonably safeguarded. However, I must, at the same time, submit that a slight fall in their revenue should not justify a shift in Government's policy or measures in relation to road transport. The fall in traffic last year cannot be, as I said earlier, entirely attributed to diversion of traffic to road transport. There was a slow-down in the productive activities in the country resulting from restrictive import policy and the consequent difficulties in obtaining raw materials and components by the industries. This could be responsible for a gradual fall in traffic. In all probability, this is a tempor-

ary development and as the Plan progresses, the expected increase in the Railway traffic is likely to materialise. Such temporary factor cannot therefore be allowed to dictate the consideration of measures of a restrictive nature affecting the development of road transport.

I would in this connection like to emphasize one particular aspect. The country needs a purposive programme of co-ordinated utilisation of all the forms of transport for meeting the needs of our developing economy. For this purpose, what is necessary is the consideration and adoption of a national transport policy incorporating the fundamental principles for development of various forms of transport, viz. rail, roads, sea and inland waterways. Hitherto efforts have always been concentrated in the direction of co-ordinating services of one particular form of transport with that of the Railways.

I think a time has now come when the practice of viewing the development of a particular form of transport in isolation must be given up and in its place a comprehensive policy evolved, laying down the basis for the development of various forms of transport, guided by the objectives among others, that ultimately the choice as to which form of transport should be utilised should be that of the user and that nothing should be done that would promote the development of any one particular form of transport, to the detriment of the interests of other forms. It is a matter of some satisfaction that Government appear to be thinking on these lines, and a proposal to set up a high-level committee to advise Government on the principles on which a national transport policy should be formulated is under consideration. Let us hope that early steps will be taken in this direction.

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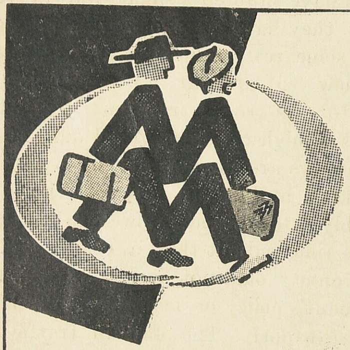

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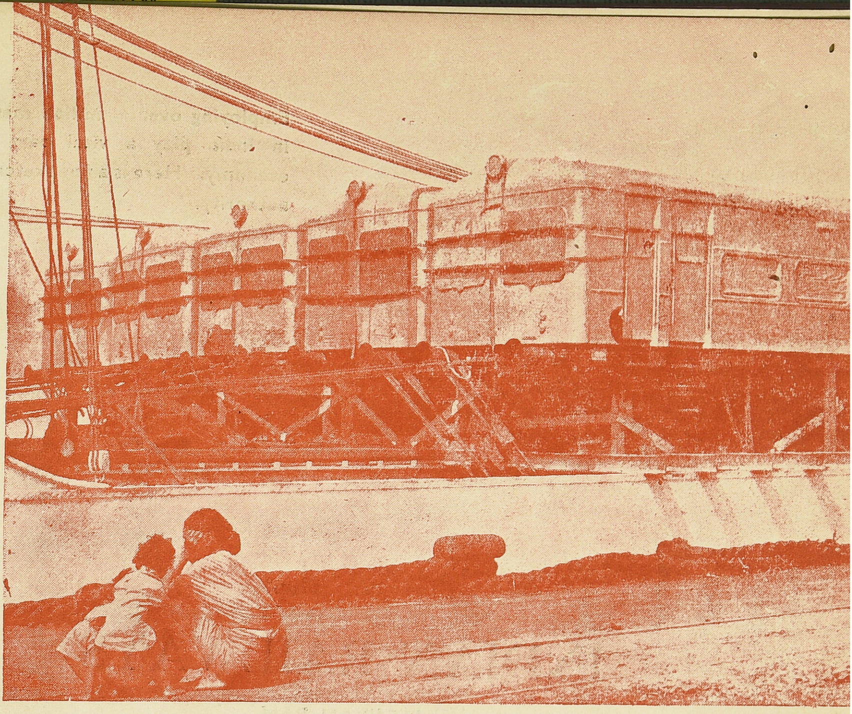

INDIAN RAILWAYS

Employing over a million men, railways in India play a vital part in India's economy. Here is a fine sketch by a great authority.

INDIAN RAILWAYS

JAGJIVAN RAM

Minister of Railways

One of the principal objectives of the Second Five-Year Plan is rapid industrialization with particular emphasis on the development of basic and heavy industries. Realisation of this objective is in turn expected to bring about a sizeable increase in National Income and expansion of employment opportunities. The Plan also provides for large sums of money for higher agricultural production. It is obvious that an efficient and well-developed system of transport is vital for the success of a plan of economic development. Considering the heavy demands that are being made on the country's means of transport, it is felt, that even larger resources than those allocated, can be utilised for this sector with profit to national economy. The allotment had, however, to be limited in view of other pressing claims on available resources.

In India, for over a century now, the term 'transport' has been synonymous with the railways. Even today, little or nothing moves in inter-regional traffic in the country without the help of the railways. During the First Plan period, as agriculture and industrial production increased, pressure on the transport system began to be felt, especially from the third year of the Plan. To meet this situation, additional allotment was made for the railways. The programme for the procurement of rolling stock for railways was accelerated and special measures were undertaken to augment line capacity over the more difficult sections.

While the task of rehabilitation still remains to be completed, the Second Plan ensures substantial expansion of the country's means of transport, especially railways, which must inevitably continue to move the largest part of the traffic.

According to the latest estimates, the railways are expected to be called upon to carry 168 million tons annually by 1960-61, as compared to only 114 million tons carried annually in 1955-56. In other words, the increase in freight carrying capacity would have to be of the order of 47 per cent—and that too in just five brief years.

Steel

Against the three steel plants in the private sector functioning up to the First Plan period, the Second Plan contemplates the addition of three new steel plants besides the expansion of existing ones. The finished steel production is expected to be quadrupled during the Second Plan period and the real crux of the problem is the large movement of raw material which in consequence will materialise. For the production of one million tons of finished steel, about five million tons of raw materials are required to be moved from the various sources to the steel works. To move one million tons of raw material in a year, it is necessary to load, on an average, 125 wagons a day throughout the year. Therefore, for a new steel plant with a capacity of one million tons of finished steel like Bhilai, Durgapur or Rourkela, the raw materials required to be moved every day come to about 625 wagons and for the three plants and expanded existing plants, the additional traffic for raw materials and finished products will be 3,000 to 3,500 wagons daily.

Coal

Similar is the story of coal. From a production of 35 million tons a year at the beginning of the Plan, the expansion contemplated in the Second Plan puts the target at 56 million tons. The major portion of this will be produced in Bengal and Bihar coal fields which are also situated in the heart of the steel traffic area. The problem of implementation of such large movements within a short period of three to four years is, probably, unique in the history of railways. It should be remembered that this will repeat itself during successive plan periods. This extraordinary pressure of goods traffic under the Second Five-Year Plan causes the difficulties which businessmen, industrialists and other rail users, at times, experience.

Passenger Traffic

The increase in passenger traffic has also been phenomenal since the commencement of the last world war. As against only 530 million originating passengers carried by the railways of undivided India in 1938-39, the number in 1956-57 was 1,382 million—over two and a half times. At present the railways carry about 38 lakh passengers daily or about one per cent of India's population or about one-half the total population of New York city.

The Second Plan makes a provision for only a 15 per cent increase in passenger traffic over the five-year period—an average of 3 per cent per annum. The actual increase during 1956-57, the first year of the Second Plan, as compared to 1955-56, was over 6.6 per cent on the Government railways. The provision of 15 per cent will, therefore, barely suffice for meeting additional traffic demands, and resources would not be available for relieving over-crowding. These facts throw further light on the problems which confront the Indian Railways and these must be fully appreciated while assessing their performance. The question naturally arises: How are the railways going to solve these problems of enormous magnitude? How are bottlenecks going to be removed?

Second Plan

The railways have chalked out their own programme for development and adoption of

modern techniques to fight bottlenecks and other difficulties. The principal items of expenditure, under the railway plan of Rs. 1,125 crores, are : rolling stock, line capacity works including expansion of goods sheds, track renewals, electrification, new line construction, workshops, plant and machinery, rail users' amenities and staff quarters and staff welfare. Among the adoption of modern methods of technique may be included the introduction of eight-wheeler bogie wagons, replacement of the screw coupling by automatic centre buffer coupler in wagons, mechanical loading and unloading, better utilisation of assets, installation of electrical humps at selected marshalling yards, etc.

During the ten-year period from 1948-49 to 1957-58, the number of goods wagons is estimated to have increased by nearly 35 per cent. However, the tonnage of goods traffic lifted is estimated to have risen by 69 per cent, indicating clearly that the wagons in service were made to work harder than before —the result of the Railway Board's drive to step up operational efficiency.

One result of this drive has been that transport bottlenecks, as we knew them since the last war, have become things of the past. This is best illustrated by the working of the marshalling yards. For instance, at Moghalsarai, India's largest marshalling yard and a notorious transport bottleneck for years, the total number of wagons dealt with rose from 937,000 in 1953-54 to 1,236,000 in 1957-58, an improvement of 32 per cent in just four brief years.

One test of operational efficiency is the duration of a wagon's detention in a marshalling yard, representing the period of its immobility. At Moghalsarai, the average detention per wagon came down from 27.2 to 21.6 hours—a 20.6 per cent improvement in four years. At Bezwada, another one-time serious bottleneck, the number of wagons dealt with rose by 17 per cent during this period, from 318,000 to 373,000. The wagon detention came down by 25 per cent, from 31.7 to 23.8 hours.

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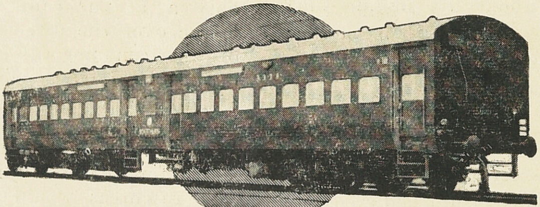

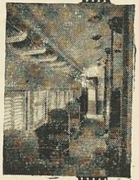

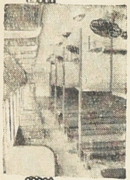

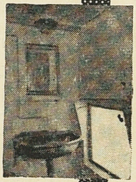

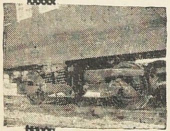

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INLAND WATER TRANSPORT

"Inland Water Transport has a great part to play in the transport system of our country provided it is properly organised and placed on a sound footing" says the Inland Water Transport committee. Consisting of engineers, I W T operators and administrators—appointed in 1957 and headed by Shri B. K. Gokhale, Chairman, Tungabhadra Board it has recommended an allocation of Rs. 50 crores in the Third Five Year Plan for the development of inland water transport. The committee has stated that this amount would hardly be enough for the execution of all the urgent schemes recommended by it, but the neglect of water transport has reached a stage where it is not possible to attain a higher rate of development. There being absence of adequate data and trained technical staff, it would be some time before the rate of development could be increased.

Plans were prepared in India for further development of waterways as far back as the 19th century, but the Government of the day did not pay adequate attention as they were greatly interested in helping private railway companies whose dividends they had guaranteed. As a result, water transport had been put out of business except in certain selected regions. Anther factor that proved disastrous to water transport was the guiding principle of balancing the expenditure by revenue from tolls. Factors such as reduced depths, restricted river training schemes, lack of dredging and un-co-ordinated construction of railways

have continued to contribute towards the decline of water transport.

Though there were some multi-purpose projects before independence, the application of the concept of unified development of river basins as a whole was made possible only after independence. In the conditions of India, irrigation must continue to be one of the most important uses of river schemes, but the navigational aspect should receive full weightage in river development schemes.

The view of the Central Water and Power Commission was that unified multi-purpose development of rivers would make vast stretches navigable and by inter-connecting some of these rivers a network of waterways from coast to coast could be prepared. The Committee is against immediately taking up the projects for direct services from coast to coast and from the North to the South. These projects may be taken up after the implementation of the various multi-purpose projects in the next 30 years in the light of the traffic conditions prevailing then. Meanwhile, navigation locks should be provided in all dams.

While emphasising that before the development of waterways can be seriously undertaken, it is necessary to arrest the further deterioration of waterways, the Committee is of the opinion that one of the chief causes of deterioration of inland water transport has been lack of a technical organisation for planning and supervision of execution of works intended for development of inland water transport.

Inland water transport can supplement other modes of transport and is particularly suited for carriage of commodities in bulk. The capital and maintenance cost compare very favourably with other modes of transport.

The committee has recommended the creation of special technical wings in the Ministry of Transport and Communications and in the Central water and Power Commission under the Ministry of Irrigation and Power.

While commending the co-ordination that exists between the railways and inland water transport in North-East India, the committee has expressed a hope that such co-ordination would be extended to other regions as well. The committee is, however, of the opinion that in the present state of development of inland water transport, there is little justification for financial participation by the railways.

The committee has recommended that greater emphasis should be laid on evolving standard designs for the manufacture of propelling machinery and ancillaries within the country. Encouragement should be given to manufacturers of stationary diesel engines to extend their scope to marine diesel engines. Similarly steps should be taken for the manufacture of dredgers. Self-sufficiency in all ancillary fields should be the aim.

The existing facilities for training of Masters, Serangs and Drivers, etc., need to be improved.

A concerted drive is necessary to make people waterminded. Encouragement of water sports, regattas, yacht clubs and organisation of boat races has been suggested.

The committee has appreciated the role played by country boats and is of the view that despite their slow speed, country boats do perform an active service to the community. It is in favour of giving facilities for the proper development of country-boats. In areas to which there is no other means of access and where self-propelled craft are unable to ply, the countryboat has a considerable part to play. The report recommends that co-operative societies of boat-owners should be organised and encouraged to manufacture country boats and run regular organised services. It recommended that the system of towing country boats by mechanised tugs be introduced on a co-operative basis. Removal of restrictions of any kind on country—boat operation by ferry contractors or by the levy of excessive tolls has been suggested.

The existing ferry services in the country, except railway ferries and State-managed services in one or two States, have not been found suitable by the committee. It has been recommended that State Governments should run ferry services on all important rivers until they are bridged. Ferry rights should not be auctioned to the highest bidders. It has also been recommended that Port authorities at major ports like Bombay, Calcutta and Madras be persuaded to organise ferry and harbour excursion services. It has further been suggested that the railways should extend their existing ferry services.

The employment potential of country craft and ferries is considerable. Expenditure on country-boats would be fully justified on this account alone.

Little justification has been found for recommending any waterway in India as a National waterway. The committee has, however, been urged that the Government of India should assume responsibility for improving and maintaining all important waterways.

The committee has recommended a number of development projects, costing a total of Rs. 67 crores and suggested that these should be further examined by the technical organisations whose establishment has been urged in the report.

Among the important development projects are the aerial and hydrographic surveys of the river Brahmaputra, provision of terminal facilities at places like Pandu, Dhurbi etcetera, provision of ship repairing and dry docking facilities in Assam, maintenance of Hijli Tidal canal in West Bengal, improvement of terminal facilities on the river Hooghly, development of a boat basin in Chitpur Canal, etc. Improvement of the delta canals (including locks) in Orissa with a view to facilitating export of iron ore has also been recommended. The committee has found little justification for developing and improving the Buckingham Canal and its linking with Madras harbour. Some experimental dredging with a view to ascertaining the possibility of maintaining existing navigable depths in the Canal has, however, been recommended.

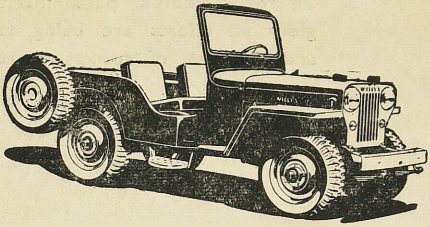
The importance of the inland water transport system in Kerala has been emphasised and improvement of the West Coast Canal between Cochin and Quilon, construction of locks between Punani and Chetwayi and extension of the West Coast Canal from Badagara upto Mahe have been recommended. The committee has found great scope for development of inland water transport in this region to facilitate imports and exports through Cochin port.

The link between Mangalore and Coondapur connecting numerous backwaters on the West Coast in the Mysore State has also been recommended.

Coastal and inland navigation has been found to be inseparable in the State of Bombay. Hydrographic surveys of the rivers and the creeks; provision of navigational aids and tugs to assist turn-round of country boats in the tidal stretches of the rivers and improvement of terminal facilities at places like Rewas Jetty in the Dharamtar Creek have been recommended.

The committee has recommended immediate studies in connection with development of Thana and Bassein creeks and Ulhas river for inland navigation to reduce the transport bottle-neck in Greater Bombay.

The committee has also recommended that provision should be made in the Rajasthan Canal (under construction) for facilitating development of water transport in the area at a subsequent date if found necessary.



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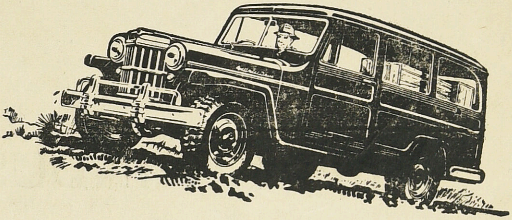

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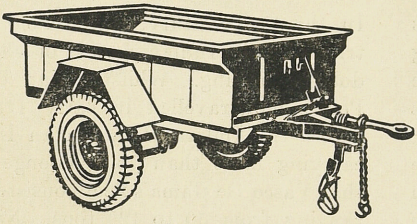

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To revive India's past maritime glory all efforts are being taken and the pace of success is really encouraging.

SHIPPING INDUSTRY

India's position as a big power was accompanied by her participation in far-flung maritime commerce. Pliny, writing in the first century of the Christian Era, mentions maritime commerce between India and Ethiopia, Egypt and Arabia. During the Gupta Period, our ships were engaged in trade with China, and under the reigns of Harsha, Pulakesi, the Chalukyas and the Cholas, Indian trading limits included the whole of Asia up to Japan. It is with the help of the partly mercantile and partly war-making fleet of these kings that Indians spread their influence to South-East Asia centuries before the coming of the East India Company.

Upto the middle of the 19th century, Indian ships were the best ships in the world. In the 13th century, Marco Polo paid a fine tribute to the Indian system of sheathing or double-planking. Whilst Friar Oderico di Pordenone travelled in early 14th century across the Indian Ocean in an Indian ship carrying more than 700 passengers, we find that Vasco De Gama's fleet consisted of ships ranging from 50 to 120 tons. Nicolo Conti, the celebrated Italian traveller, notes the existence of ships of 2,000 butts (i.e. 1,000 tons) in India and adds : " Some ships are so built that should one part be shattered, the other portion remaining intact may accomplish the voyage." This is one of the earliest references to the construction of watertight bulkheads in the annals of world shipping.

The East India Company took advantage of this tradition of Indian shipbuilding and

from 1735 when the first India-made, the "Queen," was launched in 1860, not less than 345 ships, large and small, were built in the shipyard at Bombay. This yard was created by the efforts of Lowji Nusserwanji Wadia and was at no time under an European builder. Five of the largest ships built in this yard were "Ganga", "Asia", "Bombay", "Calcutta" and "Meanee", all of between 2,285 tons and 2,298 tons. Battleships, frigates and sloops of the Royal Navy used to be built in this yard. Even after iron had supplanted teak in ship construction and steam had replaced sails, this yard turned out iron steamers of upto 500 tons and teak steamers of upto 1,800 tons as late as the 1850s.

The shipbuilding and commercial interests in Britain, however, ultimately managed to crush this industrial activity in India. The Indian Navy was abolished in 1863, thus depriving the country's maritime commerce of a defensive force. Indian coastal trade was thrown open to ships of all countries in 1850 and there was an active opposition from the Government to Indian shipping. Even, the mail subsidy given to the Bombay Steam Navigation Co., which was partly owned by Indians (and now a part of the Scindia Co.) was transferred to the British India Steam Navigation Co. Ltd., a subsidiary of the Peninsular and Oriental Steam Navigation Co. Ltd. Furthermore, the supremacy of the foreign commercial interests and their close connections with banking, insurance and shipping interests made the revival of Indian shipping almost impossible for a time.

All these considerations prompted the patriotic business interests in India to make heroic attempts to establish a truly national merchant marine as far ago as the beginning of this century. But owing to the strong and persistent opposition to these ventures by foreign shipping companies which had the monopoly of India's trade and whose attitude was largely supported by the then foreign ruling power in the country, most of these ventures came to nothing. Among the important shipping companies that have survived these are the Scindia Steam Navigation Company, the Malabar Steamship Co., and the Merchant Steam Navigation Co.

With the dawn of Independence in 1947 the outlook for national shipping companies completely changed and with the assurance by the Government of India that a "dynamic" policy of development of Indian shipping would be pursued several shipping companies came into being. Since then the growth of Indian shipping has been by and large dependent upon the availability of funds for expansion of fleets. Today the Indian merchant fleet stands at the modest level of 570,000 tons gross and carries practically the whole of the coastal traffic and about five to six per cent of the overseas trade of the country. The aim of the nation is to carry, besides the whole of the coastal trade, which has been reserved for national shipping, at least 50 per cent of the overseas trade, which is the proportion universally acknowledged as the inherent right of the merchant marine of a maritime country. To do this, it was estimated 10 years ago, that a fleet of two million tons would be necessary, and this was acknowledged as the national target by the Government of India. But since then the country's coastal as well as overseas trade have been rapidly expanding and are likely to reach substantially higher levels than at the time the estimates were made. It would therefore be in the fitness of things to revise this national target reasonably upwards but in the meantime, targets for shorter periods have been set under the Five-Year Plans initiated in 1951. The First Plan contemplated a target of 600,000 tons by 1956. Owing to many reasons, among which was the considerable hesitancy of the Government in executing its policy of assistance to Indian shipping companies, particularly in the matter of funds for the purchase of ships on reasonable and economic terms, the progress was rather slow in the beginning. Fortunately, thanks to the initiative taken by Mr. Lal Bahadur Shastri, the Minister of Transport, the difficulties were overcome to an extent and the Indian shipping companies entered on a programme of acquiring ships resulting in a tonnage of 480,000 G.R,T. at the end of the First Plan period, with an additional tonnage of 120,000 G.R.T. on order, thus making up the target of 600,000 tons.

The target for the Second Plan is 900,000 tons. Although the Indian shipping companies considered this rather as a modest target, in view of the opportunities that would arise as a result of the huge movement of goods both along the coast and in the foreign trade of the country that was expected as an offshoot of the implementation of plan projects of development of industries and agriculture, they plunged with enthusiasm into achieving the target at the earliest and utilised the whole of the amount of Rs. 37 crores that had been provided in the Plan for the purpose within a few months of the beginning of the Plan itself. But, as the amount provided was not adequate even to achieve the modest tonnage fixed and as in the meantime prices of ships had moved up considerably, it has been possible to buy only four vessels and order the construction of 28 vessels, aggregating 181,000 G.R.T. leaving a gap of about 210,000 tons for reaching the Plan target. It is imperative in the national interest that this target of 900,000 tons should be achieved, if not exceeded, and temporary difficulties should not be allowed to come in the way of progress. Since the utilisation of the Plan funds, there has been almost a stalemate in the progress of the shipping industry.

There is a provision of Rs. 45 crores in the Second Five-Year Plan which includes a carry-over of Rs. 8 crores against commitments made in the First Plan. At the close of the First Five-Year Plan, India had a Shipping Tonnage of 6,000,000 GRT. The Second Five-Year Plan envisages an addition of 390,000 GRT including replacement tonnage of 90,000 GRT. Taking into account the tonnage already acquired since the commencement of the Second Plan and the new tonnage ordered for construction, we have already ensured the attainment of about 8,00,000 GRT. It is expected that, as a result of several steps taken by the Government and private shipping interests, it will be possible, in spite of the prevailing acute foreign exchange difficulties, to achieve the Second Plan target of 900,000 GRT.

All ways and means are being explored to overcome the present foreign exchange difficulties. Permission has been given to shipping companies to acquire ships for the overseas trades on self-financing basis and as many as 10 ships have been purchased by the private sector on this basis or with the help of foreign exchange loans from foreign sources. As an additional source of finance for granting assistance to Indian Shipping Companies for the purchase of ships, Government have set up a statutory Shipping Development Fund.

It may be mentioned that while Indian Shipping had only one-third share in the coastal trade during the pre-war period, it is now carrying the entire coastal trade of India. While Indian Shipping had not plied anywhere outside the coast of India, Burma and Ceylon during the pre-war period, it is now plying in several overseas trades such as India-U.K. Continent, India-U.S.A. India-Far-East, India-Australia, India-Malaya, India-East Africa, India-Persian Gulf and India-USSR. The total gross freight and fare earnings of Indian Shipping Companies have now reached the total of Rs. 31 crores of which more than Rs. 20 crores represent earnings in the overseas trade and constitute a foreign exchange earning or saving for the country.

To ensure proper co-ordination between the different modes of transport on the one hand and Central and State Transport policies on the other, the Government of India have set up the Transport Development Council, Road and Inland Water Transport Advisory Committee and Central Transport Co-ordination Committee in place of the Transport Advisory Council and the Central Board of Transport and its Standing Committee.

To sum up, transport development, so far as air, road and sea systems are concerned, has made significant progress and if the present pace of development continues it will be possible to meet the increased needs of industrial development which is the main object of the Five-Year Plans. The over-all provision for air, road, river and sea transport and the roads is approximately Rs. 387.42 crores for the entire Second Five-Year Plan and this investment will be quite commensurate with the facilities and comforts which the transport development will provide to the industry and the public in general. ★

The tourist dollar is the only clean dollar a country earns, as some American experts describe. There is no embarrasment on either side.

TOURISM AS A SOURCE OF INCREASED FOREIGN EXCHANGE EARNINGS

S. N. CHIB

Director-General, Tourist Dept. G.I., New Delhi

Tourism became an organised economic activity after the last war. During the first five post-war years, a large number of European countries realised that one of the best methods of re-building their economics which had been shattered by the war was to develop tourism. A good part of the Marshall Aid funds was devoted to the re-building of hotels and other facilities required by tourists. Many European countries had the wisdom to set apart funds out of their own resources for this purpose even though they were passing through a severe crisis.

Important Dollar Earner

The results of this economic policy were amazingly successful. By 1952, tourism became the most important dollar earner of the 16 countries of Western Europe collectively. It has continued to maintain that position. For instance, in 1957, American tourists spent almost 2 million dollars on international travel. Tourism has the additional quality of stimulating other economic activities. The foreign exchange earned from tourism goes into almost every phase of that country's economy. A survey made last year by the Tourist Department of the Government of India showed the following breakdown of tourist expenditure: 49 per cent on board and lodging, 18 per cent on shopping, 3 per cent on entertainment, and 30 per cent on transport within India.

Tourism Earns Rs. 16 Crores in 1957

To view Indian tourism in the right perspective, we may start with a few facts. In 1951, 20,000 foreign tourists visited India; in 1957 the number was a little more than 80,000 excluding more than a million short-term visitors from Pakistan. In 1955, the earning in foreign exchange from tourism was a little more than Rs. 100 million (One dollar=

Rs. 4.75) and in 1957 the earning was above Rs. 160 million. The size of physical exports of India in 1957 was about Rs. 6,000 million. In other words, tourism as an invisible export forms 2.7 per cent of the total physical exports of the country. This is not a very impressive figure, but on the other hand the rate of increase in foreign earnings from tourism has been higher than that of any commodity export. What is important is that this rate of increase can be kept up and in five years a very impressive figure can be reached.

Problems of Indian Tourism

An equally important consideration is that to keep up this rate of increase, heavy investments in terms of resources are not required. After all, the main commodities 'sold' by tourism are natural scenery, historical monuments, food and drinks, souvenirs, handicrafts and entertainment which in any case forms part of the day-to-day life of a country. The problem of Indian tourism is to make a large number of places, where India's great monuments and temples exist, accessible; secondly, not only to increase the bed capacity in first class hotels in large cities but also to provide comfortable accommodation in tourist centres, and, thirdly, to step up tourist publicity abroad.

Earnings Can Be Increased

While private enterprise, given some assistance by way of loans, should be able to provide adequate hotel beds in large cities, the State will have to build tourist hotels and lodges in the tourist centres described above. That in fact is the basis of our plan for the development of tourist facilities. The total investment envisaged for this purpose is only about Rs. 30 million. Calculating on the basis of the present annual rate of increase, it should be possible to double the annual foreign exchange earning from tourism in three to four years. Even today, tourism is among the first six foreign exchange earning industries of India. In a few years, it will probably obtain the fourth position, next only to tea, jute and cotton textiles.

Unique Virtue of Tourism

The following illustration will show the unique virtue of tourism as a foreign exchange earner: India earned about Rs. 250 million a year from the export of iron ore and minerals. In order to step up the export of these commodities, it is a necessary to develop the facilities at Vishakapatnam Port on the Eastern Coast and the communications and transport facilities in the hinterland. An investment of about Rs. 300 million, of which about Rs. 90 million will be in foreign exchange, is required to increase the export value of minerals by about Rs. 100 million a year. In the case of tourism an investment of Rs. 30 million will easily bring in more than a hundred million a year.

Competition Helps Tourism

Another virtue of tourism is that competition among neighbouring countries helps rather than hinders it. India's export of textiles has been adversely affected by competition offered by Japan and China, but Indian tourism benefits by competition from Ceylon, Pakistan, Thailand and Japan. An American or European tourist does not come to India alone. He comes to the East and wishes to see half-a-dozen countries in one trip. Hence, it is advantageous for the region as a whole to develop the tourist facilities and to relax frontier formalities, if not abolish travel barriers, on a uniform basis. The European countries realised this long ago and started a joint publicity campaign in the States with the slogan "Come to Europe." This joint campaign, conducted year after year, vigorously and imaginatively, has yielded rich dividends.

Regional Bodies in the East

In the East, two regional bodies have been planning similar action. The Pacific Area Travel Association, of which India is a member, has been conducting a similar campaign for the last five or six years with great success. The South Asia Travel Commission, of which India, Ceylon, Pakistan, etc., are members, has formulated a joint plan which has not yet materialised.

To put the whole concept of international travel in another way: the invisible 'export' or 'import' of foreign exchange by the tourist is free from controversy. No question of protectionism is raised. Some American experts have gone to the extent of describing the tourist dollar as the only 'clean' dollar a country earns, as there is no embarrassment on either side. ***

BHARAT ELECTRONICS

Bharat Electronics Limited was set up by Government in the public sector to make the country self-sufficient in electronic equipment in the shortest possible time. Although we started production only by the end of 1956, we have kept up a steady progress since then and it is considered worth-while giving a review of our activities during the last year.

Our major achievement during the year was the development of a Twin Channel VHF Trans-receiver for air to ground communication for the Indian Air Force. This set is primarily meant for fitment in the HT-2 Trainer aircraft and will satisfy a long felt need of the Air Force, as the aircraft has been without communication equipment all these years. The set was subjected to stringent tests and has been approved by I.A.F. It will shortly go into production. Modified version of the set for Single and Ten Channel operation are under development in our factory.

A Transistorised hearing aid has been constructed and tested in our factory. It has been found to be quite satisfactory, its performance being comparable to any imported equipment and cheaper in price. After further trials this will be put into mass production.

We have also developed a transistorised Loudhailer called "BELHAILER" during the current year. Large demand exists for this popular item throughout the country. It is an electronic megaphone with self contained power supply and is required by Police, Fire Departments, Defence Establishments, Rail and Dock-yards and a host of others as a handy public address system. When we shortly go into production, our output will completely meet the country's requirements.

For the India Meteorological Department, we manufactured 10,000 "BELWIN" Transmitters during the year for upper air observation. Efforts are being made to find foreign market for this equipment.

An agreement has been signed with PYE Telecommunications of Cambridge for the manufacture of their Wireless Set type 62 which is a high frequency mobile Trans-receiver for the Defence Services, who have been importing this set for the last several years. Our production of this set will completely meet the requirements of the services.

Another important agreement signed was with PHILIPS of Holland for the manufacture of Valves. The Valves standardized by the Radio and Cable Board and accepted by the Radio Manufacturers' Association in India will be taken up for manufacture in the initial stages. The capacity of the plant will be 1.8 million Valves of the miniature type which can be substantially increased by double shift working, if the demands warrant such a step. The annual turn over will be in the order of Rs. 40/-50 lakhs when full production is reached. It is expected that the Valves will be available for sale by January 1961.

An agreement is shortly to be signed with M/s. SIEMENS and HALSKE of Germany for the manufacture of high power Transmitters which will help to conserve our contry's foreign exchange as there is an urgent need for such Transmitters in the Defence Services and other Government Departments.

Our Crystal Division now completely manufacture Piezo Electric Crystals which are critical components required to stabilize the frequency for all types of electronic equipment.

The Transformer section is well equipped for the design and manufacture of a wide range of high quality Transformers and Chokes including power transformers, smoothing Chokes (sealed and oil filled types) suitable for a wide variety of electronic applications. All Transformers and Chokes required for our equipments are produced in our factory.

There has been a steady increase in production during the year under review which amounted to Rupees 65 lakhs as against Rupees 26 lakhs during the preceeding year. For the year 1959-60, we have plans to produce equipment valued at over a crore of rupees.

The German Democratic Republic is celebrating its Tenth Anniversary this Year and its magnificent products displayed at Leipzig Fair will bear eloquent testimony to the excellence of its industrial glory.

THE LEIPZIG AUTUMN FAIR 1959

Each year two trade fairs are held in the old trading city of Leipzig, one at the beginning of March and the other in the first days of September. Now, after the particularly successful 1959 Spring Fair, during which the GDR alone closed contracts amounting to 3,400 million Marks, the Leipzig Autumn Fair is being organised. It will be a Sample Fair, with a large offer of technical commodities, to be held from August 30th to September 6th. Exhibitors from over 40 nations will display on an area of 110,000 square metres, will give an overall picture of the current standing of international consumer goods production. In addition, new developments in the field of technical commodities will be demonstrated such as: office utility machines, motor vehicles, wireless and television sets as well as precision and optical instruments, scientific & hospital equipments, etc. A visit to the Leipzig Fair offers good possibilities to buyers from overseas countries to see a united display of the export products from the Socialist and the other European countries. Further, this is an excellent opportunity to gather information concerning the present tempo of world production and to make new business contacts.

The Soviet Union will have an impressive display covering 1,000 square metres at the Leipzig Autumn Fair. The Soviet exhibition will include: vehicles, wireless sets, textiles, glass and ceramics, household and kitchen appliances and sporting equipment. Rumania, the People's Republic of Korea, and the People's Republic of China will organize collective displays. Czechoslovakia, Poland and Hungary will show their export goods in the various trade groups. The products of the German Democratic Republic will occupy the most space this year—the year in which the GDR will celebrate its tenth anniversary. During this period the German Democratic Republic has increased the volume of its foreign trade four-fold and today has trade relations with more than 100 nations. The exchange of goods with India, which is based by on governmental agreements since 1954 has grown from year to year. The Leipzig Fair has greatly helped this development. In the past years India has regularly participated at the Leipzig Fair and a large part of the existing trade agreements with the GDR and other Socialist countries are realized here. Several Indian Exporting Houses will be participating in a special pavilion and the exhibits include the usual traditional export commodities like tea, coffee, pepper, cashewnuts etc, Handicrafts, leather, shoes, animal products, coir & coir products, handloom textiles, ores, mica, etc. Each country will send its Purchase Mission or Delegation to Leipzig during the Fair and so far about 25 countries have already intimated.

INDIAN OXYGEN LIMITED

Indian Oxygen Limited, a subsidiary of The British Oxygen Company Limited, is to have as its top executive an Indian national for the first time through the appointment of Mr. A.K. Sen as Managing Director w.e.f. 1st June, 1959. Another important appointment from the same date is that of Mr. P C. Kavanagh as Assistant Managing Director. Mr. Kavanagh was formerly the Manager of the Company's Western District in Bombay. These appointments have just received the consent of the Government of India.

Mr. Sen's association with the Company goes back 21 years when he joined as the Accountant on 1st September, 1938. An Honours Graduate from the Calcutta University and a B.Sc. (Econs.) of the London School of Economics, Mr. Sen qualified as a Chartered Accountant and is a member of the Institute of Chartered Accountants in England & Wales. He became the Chief Accountant in 1943 and was later made the Secretary and Chief Accountant in 1947. In 1953, he was appointed Finance Director. Mr. Sen succeeds Mr. R.G.C. Stephenson, till recently the Managing Director of the Company, who left for Australia at the end of May, 1959, to take up a similar position with an associated company, The Commonwealth Industrial Gases Ltd.

Mr. Sen's appointment, which takes place in the 25th year of Indian Oxygen's existence, is a striking example of the Company's progressive policy of promoting Indian nationals to the highest position of responsibility.

Indian Oxygen Limited was incorporated and registered in West Bengal on the 24th of January 1935 as a Private Limited Company under the name of 'The Indian Oxygen and Acetylene Co. Ltd.' The Company was converted into a Public Company on the 15th day of January 1958 and, at the same time, its name was altered to 'Indian Oxygen Limited'. Today, there are nearly 17,000 shareholders amongst the public in India.

The Company's present business consists of the manufacture and sale of industrial and medical gases (including oxygen, Acetylene, Nitrous-Oxide and Dry Breathing Oxygen) and electrodes and in the manufacture, assembly and sale of welding and cutting apparatus and equipment and other similar articles.

The business is carried on in India at the Company's Head Office and factories in Calcutta and at 13 branch factories and offices and through 21 distribution centres, dotted all over the country.

Since its incorporation, the Company has progressively expanded both its volume of production and its range of products and it is now the main supplier of India's requirements of industrial and medical gases and equipment for welding and various other processes, involving the use of industrial gases.

In order to meet the increasing demand for its products, the Company has throughout adopted a progressive policy, both as regards expansion of its factories and as regards replacement of old plant and machinery by modern equipment.

The industrial development plans initiated by the Government of India and, in particular, the expansion in steel production envisaged by the Second Five Year Plan, are expected to give rise to a further very substantial increase in the demand for the Company's products. The company has initiated a replacement and expansion programme which involves the setting up of new factories and expansion and modernisation of existing factories and includes provision for the progressive manufacture in this country of certain equipment and accessories used in the process of welding and cutting which presently have to be imported from abroad.

Mr. A. K. SEN

Over the last 20 years, extensive research has been carried out in the U.K. and other Western countries, giving rise to major developments of new processess and in welding and cutting techniques, which have led to considerable expansion in the use of the products of this Company. Research is vital to an industry of the type of Indian Oxygen and the British Oxygen Company, through its establishments in the U.K., has made significant contribution in this respect. Indian Oxygen Limited, through its association with the British Oxygen Company, is in the fortunate position of having access to the results of this research, which have been made available to industry in India. An Agreement will shortly be signed between the British Oxygen Co. Ltd. and Indian oxygen Ltd, which will ensure the continuance of these benefits to industry in this country.

Indian Oxygen Limited is fully conscious of its responsibilities and has a proud record of service to industry throughout the years. With the increasing industrialisation in India, it looks forward to playing an even greater part in the future development of the country.

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India with its teeming millions of unemployed can achieve prosperity only though establishing millions of small Industries. This American Exhibition is really a boon to us.

SMALL SCALE INDUSTRIES EXHIBITION

BISHNURAM MEDHI
Governor of Madras

It is indeed very good of the United States Government to have thought of showing this Small Scale Industries Exhibition in the important cities in India to demonstrate the role of small-scale business and enterprise in building up a broad base for a strong and dynamic economy, so that it may be helpful to India in her efforts, to develop the small-scale industries, to raise the standard of living and to fight against poverty, unemployment and under-employment. I hope and trust that this Exhibition will give a first-hand idea of how small industries are run efficiently in America to supplement the big industrial units, to provide more opportunities of employment and to produce consumer goods. We in Madras are thankful to the United States Government for holding this Exhibition in Madras and thus giving an opportunity to the citizens here to understand and to appreciate the vast potentialities of small industries and also the American know-how at work.

The main principle for which Mahatma Gandhi lived and laid down his life was the welfare of all. With the advent of Independence under the leadership of the Mahatma, the Governments both at the centre and in the States have formulated many schemes of dovelopment in order to increase production of wealth in all spheres of activity and thus help in the raising of the standard of living of the masses. The successive five-year-plans have been framed and implemented in order to achieve a balanced and integrated development of our country in all departments of human endeavour. These schemes include of course not only heavy industries, river valley projects and hydro-electric schemes, but alongside great emphasis has been laid also on the starting and protection and development of small scale industries, village and cottage industries and the like.

The chief object of developing small scale and village industries is to extend employ-

ment opportunities, raise incomes and standard of living and to bring about a more balanced and integrated economy. Ours is a vast country with a large population. Agriculture is the base of our economy. Agriculture is a seasonal occupation and a very large section of the community has to remain idle for a few months in the year without any particular economic pursuit. It became therefore necessary to emphasize on the small scale and village and cottage industries which remained neglected for a long time. The idea behind small-scale industries is that it will lead to decentralisation of production and avoid social evils which are attributed to concentration of large enterprises in a few cities and towns, and it will prevent migration to the cities and towns of a large number of people living in rural areas.

They provide wider employment opportunities and they offer a method of ensuring a more equitable distribution of the national income and they facilitate an effective mobilization of resources of capital and skill which might otherwise remain unutilized. An extensive variety of consumer goods of quality can be produced at reasonable prices and they can make a considerable contribution to industrial economy and production by supplying, with a smaller capital investment, a large number of parts and components required by heavy industries. As Mr. Brown has said, in America, along with the major producers of capital goods, small industry flourishes very well and it is heartening to hear that there are four million small business firms in the United States employing more people than what the big industries do.

I am happy to note that in India the scheme of small scale industries has made great strides and there has been an increasing awareness of the importance of starting new industries and improving and expanding the old ones in our country with the technical assistance and service rendered by Service Institutes in various places and with the establishment of Industrial Estates and starting of technical institutions. Small industries have a large scope and a vital part to play in our development, and this Exhibition which is just being opened is very important in the present context. One can have an idea of the part played by small scale industries in the economy of an advanced country like America and in the life of the people of that

Mrs. Bishnuram Medhi, wife of the Governer of Madras, performs the opening of the U.S. Small Industries Exhibition, Madras.

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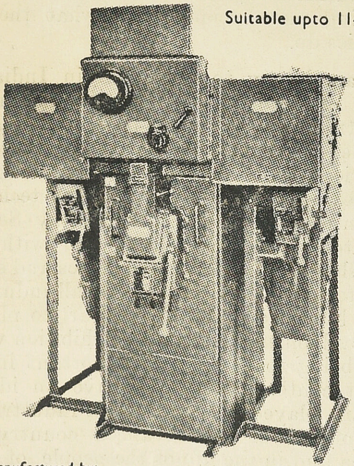

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country so that he can emulate their example in the use of machines, power and modern techniques for building up a progressive and efficient decentralised sector which may be closely integrated, on the one hand with agriculture, and on the other, with large-scale industries.

We have to work hard in our march towards the fulfilment of our objective of a Welfare State. We must build up our country on a sound economic basis. As I have often said there is absolutely no short-cut for prosperity. Hard and sustained work alone can help in the achievement of the desired results and here is an opportunity to know how by developing small industries on modern lines, we can develop our economy in a fixed time providing employment opportunities for a larger section of the working classes and under-employed agriculturists, and help in increasing the tempo of our march towards prosperity by utilising the spare time of our village folk in profitable pursuit.

I am particularly interested in the Solar Plateau which demonstrates the potentialities of the use of the solar energy for various purposes. It is indeed a novel idea that sun's unlimited energy could be utilised and harnessed for man's material comforts. In this atomic age when scientists are probing into mysteries of Nature more deeply than before, new discoveries are constantly made in the matter of utilisation of Nature's gifts and resources towards man's prosperity. I once again thank the Government of the United States of America for choosing Madras as the venue for this Exhibition and giving us an opportunity to see for ourselves the good work that is done by small industries. A Trade Mission of the American Businessmen has already been visiting various places in South India, and I hope the visit of these Business Experts here will be of lasting value to our businessmen in the matter of development of our industries. On behalf of the Government and the people of Madras, I convey our thanks to them also for taking such lively interest in our schemes of national reconstruction.

I hope it would be possible for the citizens to come in large numbers and visit this Exhibition and profit greatly by it. ★

MACHINES AND MEN

Under the big dome at the U.S. Small Industries Exhibition is the heart of the show -the Industrial Pavilion, for which three score American industrial and business firms have contributed machinery and displays.

Aiming to speak the further development of small-scale industry in India, the industrial pavilion's story fits like hand to glove with India's Second Plan objectives.

The major part of the exhibit pertaining to automotive, welding, sheet metal, prototype and precision machine tools are housed in the big geodesic dome, erected at the center of the display area.

The outer periphery of this Industrial Dome constitutes a Transport Maintenance Shop, in which motor vehicle servicing and repairing is carried out with the aid of the most modern equipment. Each aspect of automotive maintenance is done in a separate shop, which can be operated as a small business by one or two men. Taken altogether, they can repair and rebuild several thousand vehicles each year.

First to be seen is a service station, where lubrication, battery charging, and tyre changing and repair are done with up-to-date equipment. This is followed by a brake and clutch shop, where brakes and clutches can be dismantled, inspected and rebuilt.

Body repairing is the function of the third shop, where demage incurred in traffic accidents can be repaired with the aid of ingenious power tools.

Engine rebuilding is carried out in the largest of the Transport Maintenance Shops.

Finally, there is a tune-up shop where the electrical components of a motor vehicle can be tested, including generators, distributors and starting motors.

On the inner ring of the Dome, the visitors will see a number of individual shops, First, the injection molding machine is on display; next is an engraving shop, where one man can carry on a good business, engraving name plates, tools and other items. The Instrument Repair Shop and Tool Room also is seen by the visitor.

A complete heat treating shop is next on the list, and a Production Shop completes the first half of the inner ring.

In the middle of the inner ring is a Tool Crib where valuable, small tools, portable electrical devices and similar equipment will be on display.

The next shop is a Machine Tool Shop where lathes, grinders, a milling machine and a shaper and the remarkable band saw called the "DoAll" will be in operation.

There also is a Sheet Metal Shop where boxes, buckets, cans and similar items can be produced.

Within the center of the Dome is a complete furniture making shop. Here wood working machines will be in operation, turning out furniture of the highest quality.

Comprising the technical mission under the big dome are Frank W. Gilleland, of Phoenix, Ariz., associated leader of the mission who is a specialist in the fabrication of wood, plastic and metal materials; Edward W. Brown, of Conshohocken, Penn., a specialist in installation and operation of automobile maintenance equipment; and John R. Hall, of Providence, R.I., an expert in the use of precision measuring equipment.

In full array, the Industrial Pavilion can hardly fail to impress the visitor with the part machinery plays in the life of modern man. ★

RICHER FOOD

Processing and marketing of food products is the central theme of the U.S. Agriculture Mission, which will operate the Food Pavilion at the U.S. Small Industries Exhibition opening in Madras.

The tastefully rigged-up pavilion offers some answers to the vexing problem of enriching the diet without increasing costs, with particular emphasis on the mainly vegetarian diet of South India.

Among the displays is one on soybeans. Soybean protein is the best balanced and cheapest vegetable protein known to man, says David R. Farlow, who is among the team of agricultural specialists available for conferences at the pavilion. He is Assistant to the Executive Director of the Soybean Council of America, Inc., of Hudson, Iowa.

"This valuable food which as yet is virtually unknown in India seems a logical answer to diet deficiencies in vegetarian India," Farlow said.

Among other things, he will show through displays that through the addition of 12½ per cent of soy protein, the nutritional value of a pound of rice is increased two and half times at a cost of only 4 nP. per pound of rice.

Likewise, the dairy section at the pavilion demonstrates the preparation of milk and its products with the aid of modern machinery in hygienic surroundings. Milk, as is well known, is one of the richest supplements to the rice diet.

For manufacturing reconstituted milk and ice-cream from milk powder and milk fat, the dairy section is equipped with a stainless steel pasteuriser, a homogeniser, milk cooler, milk dispenser, milk storage vat, ice-cream Mix-maker, freezer, hardening cabinets and cleaning equipment.

William Scholz, marketing specialist of the Dairy and Poultry Division of the Foreign Agriculture Service, U.S. Department of Agriculture, is in charge of the Food and Agriculture Pavilion.

Two American dairy experts, Irving C. Reynolds of Toledo, Ohio, and Carl Hottenstein of Evansville, Indiana, both representatives of the Dairy Society International, are in charge of the dairy demonstration.

Another section of the Food and Agricultural Display is devoted to wheat, the king of coreals. A bread bakery, consisting of an oven and proofer entirely constructed of indigenous materials, turns out 25 one-pound leaves of bread and rolls every hour. Housewives demonstrate the modern equipment with delicious Indian and Western style wheat dishes. At the same time, the American doughnut, a wheat and soy sweet, is automatically produced at the rate of one dozen every minute.

Harman Zollinger, of the Western Wheat Growers Association, and Joseph J. Spiruta, representative in India of the Wheat Associates of America, will be on hand to discuss wheat with visitors.

* * *

SUN AS VAST RESERVOIR OF ENERGY

The interesting array of items shown on the Solar Plateau at the U.S. Small Industries Exhibit affords a peep into that future when our source of energy for household appliances will be as inexpensive as the sun's rays.

A prominent American scientist in the field of solar energy, Dr. John I. Yellott of Phoenix, Arizona, has assembled at a bright corner of the exhibition grounds, practical applications of this energy from a solar furnace to solar battery-powered radios.

The Solar Listening Post, which has potential in India's non-electrified villages, is a radio receiving station which derives all its power from the sunlight. Sun rays fall upon the solar battery, mounted above its assembly. The receiver is good for both shortwave overseas stations and local transmitters. It is provided with storage batteries which are kept charged by the solar cells so that the radio will work at night as well as during the day.

The solar batteries displayed at the exhibition are now being used by the United States for operating radio transmitters on space satellites.

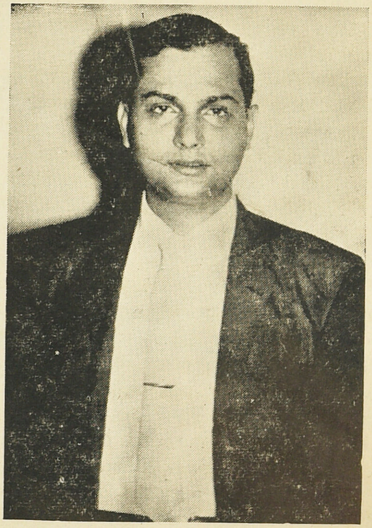
America's latest Paddle-wheel satellite demonstrates its efficacy most spectacularly.

Another exhibit which is likely to arrest the attention of visitors is an over developed by an American woman scientist. By turning the oven towards the sun, temperatures can be reached which are just as high as those obtained by a fuel-burning stove.

A simple and inexpensive plastic lens forms the chief constituent of the jewelry furnace exhibited in the solar section. Such furnaces are used in the United States by men and women whose hobby is to make small pieces of jewelry. They produce temperatures high enough to melt enamel, solder, and similar materials.

Other exhibits are a solar furnace and stove; a shooting gallery which demonstrates the projection of the sun's rays upon distant objects; a water heater which provides sun-heated water for the kitchen and the bathroom; a solar still, and solar clocks and sundials.

Thus the solar energy display seeks to drive home how the abundance of sun-power prevalent in India as in other tropical countries can be tapped for cooking and for other domestic and commercial purposes.



Mr. Kewalkishan Aggarwal, Managing Director of Devidayal Cable Industries Private Ltd., recently returned to India after an extensive and successful business tour of Europe.

AIR TRANSPORT

The first big step towards the development of air transport was its nationalisation in 1953 when the industry entered a new phase of development. Since then, the pace of progress has been accelerated. Compared to the figures of 1947, the annual passenger traffic carried by Indian aircraft has more than doubled, cargo loads have gone up by 15 times and mail loads by 9 times. The traffic carried by the two Corporations on scheduled services during the year 1957 was over 6,15,000 passengers, 85 million pounds of freight and 13 million pounds of mail. No less have been the advances of non-scheduled services, which during the year 1957 carried over 1,20,000 passengers and 87 million pounds of freight. The Indian Airlines Corporation now operates over 100 flights per day covering many important cities and towns in the country and connecting the adjacent countries, namely, Ceylon, Burma, Nepal, Pakistan and Afghanistan with India. Freight services between Calcutta and Gauhati and between Calcutta and Agartala are run upto a maximum of seven to eight times a day respectively. The introduction by Indian Airlines Corporation of the Viscount aircraft in the year 1957 was an important development. These aircrafts are fully pressurised and suitably equipped to ensure a comfortable journey. The Viscount aircraft has now been placed on all the important routes operated by the Indian Airlines Corporation. The Night Air Mail services operated in the country are one of the most unique air services operated in the world.

In the field of international services, the introduction by Air India International on 14th August, 1958 of a scheduled service between Delhi and Moscow via Tashkent was an important event. The service is operated with Super-Constellation aircraft on a frequency of one flight per week in each direction. Other important developments in the field of international services since the beginning of the Second Five-Year Plan period are the increase in frequency of the service operated by Air India International on the route Bombay-Calcutta-Bangkok-Hongkong-Tokyo from two to three times a week from 7th October, 1958 and the introduction of a second weekly service on the route Bombay-Madras-Singapore-Djakarta from 11th October, 1958. Air India International now operates services to London, Paris, Rome, Zurich, Dusseldorf, Prague, Damascus, Cairo, Geneva, Darwin, Djakarta, Aden, Tashkent, Beirut, Nairobi, Bangkok, Tokyo, Hongkong, Singapore, Sydney and Moscow. The fleet of Air India International has recently been strengthened by the addition of two Super-Constellations. Three Super-Constellations were received by the Corporation in the beginning of the Second Five-Year Plan. Air India International has now ten Super-Constellations and three Boeing 707 Jet airlines are on order. In addition to a number of Dakotas, the fleet of Indian Airlines Corporation now includes ten Viscounts, six Skymasters and seven Herons. Air transport, the youngest of our transport systems, has made a very healthy progress and is bound to play an important role in the development of our country.

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